



PATENT
 Customer No. 22,852
 Attorney Docket No. 8303.0042-06
 PPG Ref. No. OC-571C1 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	
)	
Jonathan D. ZOOK <i>et al.</i>)	Group Art Unit: 1711
)	
Application No.: 10/644,389)	Examiner: Duc TRUONG
)	
Filed: August 19, 2003)	
)	
For: SEALANTS AND POTTING)	Confirmation No.: 6131
FORMULATIONS INCLUDING)	
MERCAPTO-TERMINATED)	
POLYMERS PRODUCED BY THE)	
REACTION OF A POLYTHIOL)	
AND POLYVINYL ETHER)	
MONOMER)	

Commissioner for Patents
 P.O. Box 1450
 Alexandria, VA 22313-1450

Sir:

AMENDMENT

Listing of the Claims are reflected in the listing of the claims that begin on page 2 of this paper.

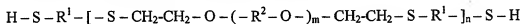
Remarks follow the claims section and begin on page 7 of this paper.

LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-21. (Canceled).

22. (Previously presented) A polythioether comprising:



wherein

R^1 is selected from the group consisting of C_{2-6} n-alkylene, and a $-(\text{CH}_2)_p\text{-X}]_q-$

$(\text{CH}_2)_r-$ group;

R^2 is selected from the group consisting of C_{2-6} n-alkylene, and C_{6-8} cycloalkylene;

X is selected from the group consisting of O and S;

m is an integer between 0 and 10;

p is an integer between 2 and 6;

q is an integer between 1 and 5;

r is an integer between 2 and 10; and

n is an integer between 1 and 60 selected so that the molecular weight of the polythioether is between 1,000 and 10,000 Daltons.

23. (Previously presented) The polythioether of claim 22 wherein R^1 is $\text{C}_2\text{-C}_6$ n-alkylene.

24. (Previously presented) The polythioether of claim 22 where R^1 is $-[(CH_2)_p-O-]_q-$
 $(CH_2)_r-$ where r , p , and q are 2.
25. (Previously presented) The polythioether of claim 22 wherein R^2 is C_2 alkylene.
26. (Previously presented) The polythioether of claim 22 wherein the molecular weight of said polythioether ranges from about 2000 to about 5000 Daltons.
27. (Previously presented) The polythioether of claim 22 having an atomic percentage ratio of C:S:O of 35-49 : 20-60 : 0-20.
- 28-30. (Canceled)
31. (Previously presented) A mixture of polythioether polymers comprising:
a polythioether polymer having the formula
 $B- \{ -S-R^1-[-S-CH_2-CH_2-O-(R^2-O)_m-CH_2-CH_2-S-R^1]_n-S-H \}_z$
wherein
 R^1 is selected from the group consisting of C_{2-6} n-alkylene, and a $-[(CH_2)_p-X]_q-$
 $(CH_2)_r$ group;
 R^2 is selected from the group consisting of C_{2-6} n-alkylene, and C_{6-8} cycloalkylene;
 X is selected from the group consisting of O and S;
 m is an integer between 1 and 10;
 p is an integer between 2 and 6;

q is an integer between 1 and 5;
r is an integer between 2 and 10;
z is an integer from 3 to 6;
B is a z-valent group of a polyfunctionalizing agent; and
n is an integer between 1 and 60 selected so that the molecular weight of the
polythioether is between 1,000 and 10,000 Daltons.

32. (Previously presented) The polythioether mixture of claim 31 wherein z is 3.
33. (Previously presented) The polythioether mixture of claim 31 wherein the mixture has an average functionality between 3 and 4.
34. (Previously presented) The polythioether mixture of claim 31 wherein the average functionality is between 2.05 and 3.00.
35. (Currently amended) A curable composition comprising:
40 to 80 weight percent of a polythioether polymer according to claim 22,
10 ~~5~~ to 50 ~~60~~ weight percent of a filler and 10 weight percent of a curing agent.
36. (Previously presented) The curable composition of claim 35 further comprising one or more additives selected from the group consisting of: pigments, cure accelerators, adhesion promoters, thixotropic agents and isopropyl alcohol.

37-40. (Canceled).

41. (Previously presented) The polythioether of claim 22, wherein r is an integer between 2 and 6, R^2 is C_{2-6} n-alkylene, and m , p and q are each 2.

42. (Previously presented) The polythioether mixture of claim 31, wherein, r is an integer between 2 and 6, R^2 is C_{2-6} n-alkylene, and m , p and q are each 2.

43. (Currently amended) A curable composition comprising: 40 to 80 weight percent of a polythioether polymer according to claim 41, 10 ~~5~~ to 50 ~~60~~ weight percent of a filler and 10 weight percent of a curing agent.

44. (New) The curable composition of claim 43 which includes from about 0.1 to about 5 weight percent based upon the total weight of formulation of fumed silica.

45. (New) The curable composition of claim 43 wherein the filler comprises carbon black.

46. (New) The curable composition of claim 43 wherein the filler comprises calcium carbonate.

47. (New) A curable composition comprising: 40 to 80 weight percent of a polythioether polymer according to claim 22, 10 to 50 weight percent of a filler, and 90% to about 150% of the stoichiometric amount of a curing agent based upon -SH equivalents.

48. (New) The curable composition of claim 46 which comprises about 47 weight percent polythioether polymer, about 0.7 weight percent of amorphous silica, about 34 weight percent calcium carbonate, and about 7 weight percent curing agent, based on the total weight of the composition formulation.

REMARKS

Applicants' representatives acknowledge with appreciation the communication from Examiner Duc Truong on July 21 and 23 requesting a paper copy of Senior Party Zook (PRC) Motion 2 ((Miscellaneous Motion Requesting Acceptance of an Unintentionally Delayed Request for Priority Benefit), the opportunity to inform Examiner Duc Truong of the duty imposed during Interference 105,555 (MPT) to address allegations raised by Junior Party Zook (PBT) that certain claims lack written description and/or are based upon new matter, and authorization to provide the requested paper copy of PRC's Motion 2 with the paper addressing the outstanding issues raised by the allegations of the Junior Party.

New claims 44-47 have been added. Claims 35 and 43 have been amended. The new claims are all dependent claims and the amended claims have been narrowed by the present amendment. Thus, neither the new claims nor the amended claims raise any new issues of patentability; moreover, the present amendments do not add new matter. The new claims find support in the application as originally filed. For example, support for: claim 44 can be found at page 21, lines 28-29; claim 45 can be found at page 20, line 9; claim 46 can be found at p. 19, line 11-16, and page 20, lines 3-6 and 11-13; and claim 47 can be found at page 34, line 7, to page 35, line 17 (see also page 19, lines 19-23). Similarly, the amendment of previously pending claims 35 and 43 find support at page 20, lines 11-13. Since all of these inventions are reasonably conveyed by the specification, there is no issue of new matter.

Motion with Petition to Correct Unintentionally Delayed Request for Priority Benefit

Senior Party Zook (PRC) Motion 2 ((Miscellaneous Motion Requesting Acceptance of an Unintentionally Delayed Request for Priority Benefit) was originally filed November 30, 2007. As requested by the Office, a copy of the previously filed motion and associated papers is

provided herewith in paper form. Applicants submit that the motion and associated papers support the grant of the benefit of priority as set forth therein. Applicants request that the Examiner forward the motion and associated papers to the Petitions branch for processing.

Unfounded Allegations of a Lack of Written Description and/or New Matter

Junior Party Zook (PBT) included in its Preliminary Motion List (Attachment A), dated August 22, 2007, allegations that claim 22 and claims dependent therefrom were unpatentable because “there is no support for the term ‘m’ to be defined as an ‘integer’.” Specifically, PBT alleged that:

claims 22-27 and 35-43 of ... Application 10/302,177 [*sic*], that correspond to the count, are unpatentable for new matter ... The Senior Party’s specification, and the claims as originally filed, recite that “m” is a rational number ... claim 22 was amended to state that “m” “an integer between 0 and 10”. It is axiomatic that “0” is an integer, but not a rational number. [and that] claims 22-27 and 35-43 ... are unpatentable for lack of written description support ... [as] there is no support for the term “m” to be defined as an “integer”.

(Junior Party Zook’s Preliminary Motion List, page 2, line 16, to p. 3, line 8)(emphasis in original) The Board mandated that “PRC sh[ould], upon resumption of ex parte prosecution, inform the Examiner of PBT’s rational number allegation and/or amend the claims to correct the alleged problem.” (Attachment B: Interference 105,555 (MPT), Paper 22, page 3, lines 17-19)

In response, Applicants submit that both the arguments raised by Junior Party Zook stem from a single, fundamental error. Specifically, the error that zero (0) is not a rational number. Various defined, a rational number is “[a] number capable of being expressed as an integer or quotient of integers” (Webster’s II New College Dictionary (3rd Ed. (2005))) or “a number that can be expressed as an integer or the quotient of an integer divided by a nonzero integer” (Merriam-Webster Online Dictionary). Further, an integer is “[a] member of the set of positive

numbers {1, 2, 3, ...}, negative whole numbers {-1, -2, -3, ...}, and zero {0} ..." (Webster's II New College Dictionary (3rd Ed. (2005)) As zero (0) is an integer, by definition, and a rational number is one that can be expressed as the quotient of an integer divided a nonzero integer, again by definition; zero, which can be expressed as zero divided by a nonzero integer, is a rational number.

Stemming from the underlying, fundamental error that zero (0) is not a rational number, the allegations that claims 22-27 and 35-43 are unpatentable for new matter and/or for lack of written description presented during Interference 105,555 (MPT) are unfounded as the phrase "rational number" characterizing the variable "m" in the chemical formula indicates integers, including zero. Applicants request allowance of the claims to issue.

CONCLUSION

Should this amendment or any of the papers submitted herewith raise any questions, the Examiner is urged to contact Applicants' attorney undersigned below for a telephonic interview to resolve the questions. Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

Date: October 8, 2008

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